

# FlightFax

REPORT of ARMY AIRCRAFT ACCIDENTS

November 1996 ♦ Vol 25 ♦ No 2



RECIPE  
for DISASTER

DISTRIBUTION STATEMENT A

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## *"Well, that would never happen to ME!"*

We've all heard it. Most of us have said it—maybe a couple of times.

It happens when we hear a "war-story"—or read an account in *FlightFax*—about some tragic, scary, or incredibly stupid experience in aviation. Our bluster is a kind of posturing—deflecting possible notions by peers that chinks might exist in our armor.

But how many of us have actually been present as one of these aforementioned events unfolded? How many have actually sat there watching things get stupider and stupider? And it's *you* sitting there. And you find yourself essentially powerless to do anything.

I'm here to tell you that, despite aircrew coordination training, despite the "Two-Challenge Rule," despite *anything*, it can happen and it does happen every day.

## *My tale begins . . .*

. . . in the jungles of Central America—The Last Mission Of The Last Day of a 6-month road- and school-building operation. The pilots were two senior W4s: one, an IP, PC, and UH-60 operations officer who'd been in-country for the entire operation; the other, me, at the end of my second 2-week deployment.

A Chinook was scheduled to extract a group from a hillside LZ, but the aircraft developed maintenance problems. Ops decided our UH-60 would try to do it. But it was the rainy season, and the afternoon torrent had already begun.

With the rain coming down faster than an inch per hour, visibility was nearly nonexistent as we cranked, and water poured into the cockpit from various leaks. Nevertheless, the PC thought we might make it to the pickup point by slowly working our way up the river that ran by our base camp. We crept off the ground, our young—and now drenched—crew chief clearing us past mist-shrouded trees.

We picked our way along in intense rain with the ceiling defined by getting high enough into the shower to lose sight of the ground. I remarked that it didn't seem like a very good idea to try and get through in these conditions, but the PC told me he'd seen worse. I suggested we try a route along the nearby coastline since shower activity looked to be minimal there. He agreed but wanted to press on in case we could skirt everything via the river.

## *Then the FIRE light came on.*

Knowing that false alarms are common in heavy rain, we checked for smoke or other evidence of fire. No one was surprised that nothing was wrong. Moments later, the FIRE light went out.

We continued, conditions worsening and visibility decreasing—as low as a hundred feet or so in some of the heavier downpours. Even with the windshield wipers

flailing at their highest speed, navigation was treetop-to-treetop at best. I told the PC this *still* didn't seem like a wise thing to do and he sort of agreed, admitting it didn't look good to him either. The FIRE light popped on again and went out.

This prompted us to turn around. Then the FIRE light came on and stayed on. Concerned, I suggested we call this whole thing off, but he now wanted to try the coast and asked if either of us had a problem with doing that. Considering that the crew chief and I both knew the FIRE light was a false alarm and the coast looked a lot better, we reluctantly assented.

Toward the coastline, we immediately broke out of the heavy rain, and the FIRE light disappeared. We headed along the fringe of the rain activity to try and find a spot to get through.

But it quickly became obvious that this shower was massive: a solid wall running through the hills for many miles. As we continued, conditions worsened again; the downpour resumed, and visibility in the direction we needed to go dropped to zero.

## *Suddenly . . .*

. . . our PC turned out to sea, heading for an island about 5 miles across open water, telling us his plan was to follow a string of islands and try to reach the pickup point that way. In driving rain, at an altitude of about 500 feet above the water, without flotation gear, no navigational receiver or GPS, a marginal-at-best tactical radio, and no map, I felt like we'd been hijacked. Only I couldn't squawk 7500 because the transponder didn't work either. And besides, what the *hell* were we doing in heavy rainshowers at 500 feet and more than 2 miles from the nearest patch of solid ground? I told him I had genuine reservations about continuing.

"No problem," he told me as we followed the islands back toward The Great Wall Of Weather. He'd been here 6 months, he said, and knew exactly where he was. I told him that might be true, but *I* still didn't have a good feeling for where we were. He lamented that people sent down here didn't get the opportunity to become as familiar with the area as *he* was.

He began describing landmarks visible here and there and insisted he knew where he was. I told him none of that would matter if we got stuck behind some ridgeline. He pointed out that we had plenty of fuel.

As we continued, I imagined someone reading the account of this foolish misadventure as part of an accident report. Suddenly, all the unbelievable, fact-filled reports I'd read assumed a new reality—it was *me* being drawn ever deeper into deadly absurdity by some individual apparently obsessed with accomplishing a mission. Remembering my aircrew coordination training, I again told him I was genuinely uncomfortable with what we were doing and

that we should turn back. No response. ("Two-Challenge Rule" scoffers take note: *YOU* get into a cockpit fight under these conditions!)

Back on the mainland, we felt our way through the torrent, poking around hilltops until he decided this approach wouldn't work after all. To my—and I'm sure our crew chief's—utter relief, he headed back toward the bay and more open conditions.

But as we continued homeward, he spotted an opening and decided to follow it. I told him again how uncomfortable I was with doing this—the Cold War was over and there were no Russians chasing us. He chuckled as we followed the cloud-obscured ridgeline until finding a tiny hole.

He dropped over it despite my warnings about its volatility. No problem; we could always find another way out.

Now inside the ridgeline and committed to a yet *more* intense adventure, he joked about our spending the night at the remote camp.

### **Nobody laughed.**

Following a dirt road and a few treetops, we located the edge of a village and picked up the road our Task Force had built. We traced it up the mountain, slowly ascending through the downpour toward the ragged cloud bottoms. The LZ came into view just beneath the ceiling. The PC gave me the controls and I landed.

Our contact was "Shark Fin 07," and the radio operator sounded amazed as he answered our call. The PC asked for ten passengers and they sent them. I told him that once—and *if*—we got back, that was *it* for this day as far as I was concerned. Sensing by now that I was somewhat troubled by the enormous amount of unnecessary risk this mission represented, he told the radio operator this would have to be our only load. The radio operator assured us that was okay; because of the weather, they'd already set up rides back to the base camp for everyone via ground vehicle anyway. He thanked us for our efforts.

Loaded up, I pulled in power to find our rotor in the clouds. The PC took the controls. He'd spotted some trees down the hillside and headed for them. We began picking our way back along the base of the ridgeline, now looking for an escape.

As we approached what looked to be a hole, I angrily told him I thought what we were doing was foolish and absolutely unnecessary, that we now threatened the lives of ten innocent people in addition to

our own. The crew chief, who had been keeping quiet all this time, came on the intercom to say he wanted out when we got back.

The hole turned out to be a good escape, and we dove for it. All at once, visibility improved and we headed back. He gave me the controls again. He'd proved he could "accomplish the mission." And he'd certainly impressed me.

### **All I wanted was out.**

After landing and shutdown, I grabbed my gear and stormed off in the still-pouring rain, more angry at myself than anything else.

Stupidly, I had let myself be drawn under the control of someone with an obsessive compulsion to "accomplish the mission" regardless of risk. What happened to myself and the crew chief is the very stuff I "tsked" about when reading accounts of events leading up to accidents. It will never happen again.

Every day during my deployment, I'd posted a "Thought for the Day" in Flight Ops; that day's was: "Experience is something you don't get until just after you needed it." Apparently, I'd missed my own point.

I had a long talk with the aviation OIC but to little avail; after all, the operation was over now. The next day, I took the ops officer/IP/PC aside for a half-hour discussion about how stupid it had been: I was lucky because *he* was lucky; how would he like his excessive motivation to be responsible for killing a bunch of innocent people? I think he listened. Or perhaps he didn't.

What might have prevented the whole debacle would have been a serious pre-mission brief stressing risks, controls, and the criticality of continually verifying *everyone's* desire to continue. Plying a razor-thin line between treetops and cloud-bottoms is hardly the place to discover your PC has flushed everything he learned in aircrew coordination training. And that seems the most important lesson, since in today's "can-do," "Hooah!," "good-to-go" world, excessive motivation increasingly replaces calm, considered judgment.

And, sorry, but I don't want to hear, "Yeah, well *I* woulda took them controls!" or "*I* woulda put it on the ground right then and there!" or any other armchair quarterback chin music. Like any genuine war-story, you had to *be* there.

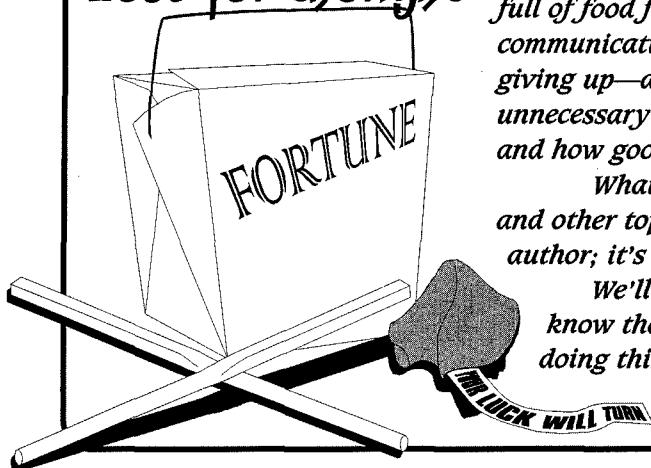
### **And remember too . . .**

. . . this guy is *still* out there.

—Anonymous



## Food for thought



*"Recipe for disaster" is a true story written by a senior warrant officer. It's full of food for thought about a lot of things: about weather; about cockpit communication; about aircrew coordination; about speaking up, giving in, giving up—about saying "Enough"; about mission at all costs, about unnecessary risk; about judgment, about lack of it; and about craziness—and how good aviators can let themselves get caught up in it.*

*What do you think? We invite you to share your thoughts on these and other topics. If you like, we'll protect your identity as we're doing for this author; it's the lesson, after all, that's important.*

*We'll start the ball rolling by talking about the weather. We don't know that these guys were doing anything illegal, but they certainly were doing things that were imprudent. Luck is all that got them back alive.*

*And that should be food for thought for all of us.*

## About the weather . . .

**Ask yourself: Even if it's legal to go, how prudent is it?**

What happens if it's right at the limit—just good enough to take off? What if you do take off and then it turns to soup

15 minutes into the mission? What are you going to do now? Can you land where you are and wait it out? What are you going to do if you can't?

What if it gets so bad that you decide to turn around, and there *ain't no turning around*—you bump into the clouds? What are you going to do now? Do you have a plan? Do you have enough fuel? Are you prepared to deal with IMC?

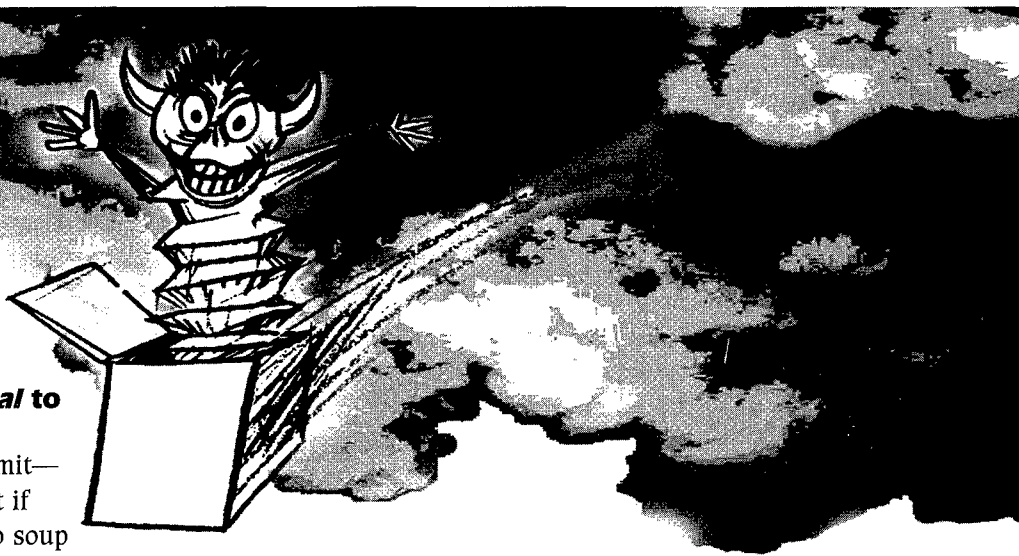
**Ask yourself: Am I truly prepared to deal with IMC?** Do you have excellent proficiency? Are you totally prepared? Do you have a plan that you've coordinated with the rest of the aircrew? Have you briefed it? Is the aircraft properly equipped? Do you have nav aids and instrument approaches available? Do you have a coordinated plan to reduce the effects of spatial disorientation should it strike you or another crewmember in inadvertent IMC?

**Ask yourself: How bad does it have to get before I say no?** If you are routinely flying in the worst weather that's legal to fly in, it's only a matter of time until you find yourself inadvertently IMC. And if you're not ready—not fully prepared—this could be where the statistics catch up with you and you have an accident. And please remember that accidents resulting from inadvertent IMC situations are *very rarely* minor accidents.

**Ask yourself: Is this mission worth doing in this weather?** Maybe your unit should establish some weather criteria of its own. How much experience does the unit have? Are you a bunch of old-timers who've got a lot of IFR time and are well prepared to deal with IMC? Or are most of you rookies who haven't been inside a cloud since you were with your IP in flight school? Or are you somewhere in between? Maybe you should have different unit minimums that consider not just crew experience but mission criticality as well. And what if you establish ahead of time the level at which go-no-go decisions are made—that if the weather is *here*, then the decision must be made at *this* level. In other words, what if you elevate the decision to a level that's consistent with the level of risk?

Sound familiar? Good! That's basic risk management.

And basic good sense.





## ASO conference update

**T**he Aviation Brigade Safety Officer Conference is scheduled to coincide with the Aviation Senior Leaders' Conference 13-17 January 1997 at Fort Rucker. The theme of the conference is "Protect the Force through Risk Management." Agenda items to date include risk-management integration, the latest from the Army Safety Center, FY96 conference followup actions, and emerging issues that require action by a MACOM, the Aviation Branch, or the Safety Center. Workshop time will also be given to MACOM safety offices.

Attendance is limited to 50 brigade, division, corps, and MACOM ASOs. If you plan to attend, you need to preregister right away. Send your name, rank, SSN, unit address, duty position, and e-mail address to Ms. Mary Ward by any of the following means:

- Phone: DSN 558-2445/2947 (334-255-2445/2947)
- Fax: DSN 558-2670 (334-255-2670)
- E-mail: wardm@rucker-safety.army.mil
- Mail: Commander, U.S. Army Safety Center, ATTN: CSSC-RT (Ms. Ward), Bldg. 4905, 5th Ave., Fort Rucker, AL 36362-5363.

There's still time—but not much—to add issues to the agenda. To do so, e-mail or fax them to Ms. Ward in the following format: issue, discussion, and recommendation.

Fifty rooms at the Fort Rucker BOQ are reserved for conference attendees. You may call the Billeting Office at DSN 558-3780/3782 (334-255-3780/3782) to reserve yours.

When we receive your preregistration, we'll send you a welcome letter containing more information. You may also contact CW5 Barker at barkerm@rucker-safety.army.mil, CW4 Mahoney at mahoneyp@rucker-safety.army.mil, or CW4 Helbig at helbigc@rucker-safety.army.mil. If you prefer to call, you can reach them at DSN 558-2443/2381 (334-255-2443/2381).

## More on ASO list server

**L**ast month, we gave you a heads-up on the new list server for ASOs. We promised you subscription information when it became available. It's now available.

The new list server is called "ASOLIST." To subscribe, e-mail your request to—

ltserv3@pentagon-hqdadss.army.mil

Be sure to use the e-mail system on which you want to receive ASOLIST, because the server will automatically detect your user-ID and e-mail address from your request.

The first line of your request must read: SUB ASOLIST YOUR NAME YOUR POSITION YOUR LOCATION DSN [or commercial phone number] (example: SUB ASOLIST JOHN SMITH ASO FT ANYWHERE STATE DSN 555-5555). No other information is required. As soon as you sign up, you will receive an e-mail message giving you the rules of engagement (ROE) for the list server. The ROE message will list all the commands that make the list server work. Please review the ROE before sending a message to ASOLIST.

In the simplest terms, ASOLIST automatically distributes messages to everyone on the list. That means that everyone who subscribes to the list receives a copy of every message addressed to ASOLIST. It's similar to a command radio net in that everyone "hears" your message. So, although ASOLIST is a *closed* rather than a *public* list (not just *anyone* can subscribe), you should be sensitive to the information you transmit.

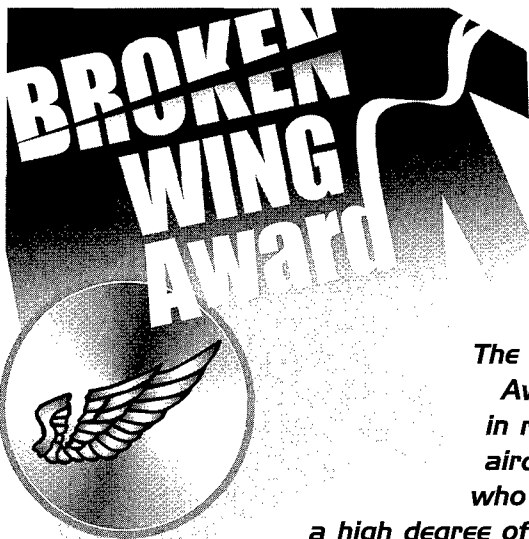
Sample topics of discussion include the following:

- Problem solving (How do I...? Has anyone ever heard of...? Given XYZ, what are the alternatives?)
- Sharing experiences (We figured out how to.... We found a great source of info on....)
- Expediting messages (Here's the recent DA message on.... Here's the Safety Center's guidance on.... We have critical assignment openings in.... Anyone interested?)
- Sharing information (conference, meeting, exercise, and product announcements; safety lessons learned; current safety topics and issues.)

### Disclaimer

ASOLIST is an unofficial, unmoderated list provided only as a clearinghouse for general safety information. Classified or privileged information, Privacy Act data, for-official-use-only information, and Scientific and Technical Information (STINFO) are not allowed on this mailing list. Messages posted on this list do not necessarily represent DOD, Service, or organization policy.

POCs: CW5 Mark Barker, DSN 558-2443 (334-255-2443), or CW4 Carlton Helbig, DSN 558-2381 (334-255-2381)



**The Broken Wing Award is given in recognition of aircrewmembers who demonstrate**

**a high degree of professional skill while actually recovering an aircraft from an in-flight failure or malfunction necessitating an emergency landing. Requirements for the award are spelled out in AR 672-74: Army Accident Prevention Awards.**

going to the emergency-governor position. When he did this, the engine surged twice and continued to spool down. As the aircraft cleared the 12-foot berms, CW3 Werner applied remaining collective in an attempt to cushion ground impact. The collective hit the upper stop at about 5 feet AGL as airspeed dropped to less than 10 knots. Observers stated that they could count the rotor blades as CW3 Werner maneuvered the aircraft into an acceptable landing attitude. The aircraft hit the ground tail low as it crossed a packed-gravel road. The force of impact spread the skids and caused the aircraft to rock forward onto the 20mm cannon, which dug into the ground. CW3 Werner had the presence of mind to apply full aft cyclic, which kept the main rotor blade from compromising the gunner's station. While the aircraft sustained Class B damage, both crewmembers walked away.

■ CW3 William R. Long, Headquarters, Tennessee Army National Guard, Nashville, TN. The UH-1H was at 1,000 feet AGL when the tail-rotor pitch change link bolt broke, resulting in airframe vibration and loss of tail-

■ CW3 Floyd S. Werner Jr., 1st Squadron, 1st Cavalry Regiment, APO AE 09076. The mission was for three AH-1Fs to take off from a FARP and reposition to a sod strip about 400 meters away, where they would link up with six OH-58Cs for return flight to home station. CW3 Werner was pilot in command of Chalk 2 in the flight of three Cobras. On climbout as the flight departed the FARP, CW3 Werner applied 95 percent torque to remain above the lead aircraft's rotorwash. As Chalk 2 was climbing over 40-foot pine trees, the copilot in the front seat called out that there was a reduction in engine noise and a corresponding droop in N2. CW3 Werner confirmed the droop to be at 97 percent N2, and both crewmembers ensured that the throttle was in the full-open position. CW3 Werner went to full increase with the INC/DEC switch, with no response. He then started a left turn back to the FARP, which was the only suitable area available. At 20 to 30 knots over 40-foot pine trees, numerous stumps, and 12-foot earthen berms, the low RPM audio sounded and the low RPM light came on. CW3 Werner lowered collective slightly to regain some rotor RPM and unload the engine. Both rotor and engine RPM continued to decay. Realizing that the aircraft would not clear the trees, the berms, and the stumps in the flight path, he decided to trade some rotor RPM for some altitude to clear these obstacles. As the aircraft cleared the trees, the copilot announced that he was





rotor thrust. The aircraft yawed right and assumed a nose-low attitude. The PI reduced collective and airspeed and transferred the controls to CW3 Long, the PC. CW3 Long quickly determined that pedal inputs aggravated the airframe vibration and provided no aircraft control. A muddy, wet, plowed cotton field was available and appeared suitable for a run-on landing, so, due to the extreme airframe vibration, CW3 Long decided to land immediately. Maintaining directional control with throttle and collective, he accomplished a power-on running landing with no loss of heading, completing touchdown to stop in about 45 feet. Neither crewmember was injured, and there was no significant damage to the aircraft.

■ **Mr. John Ralph Bechtold, APG Support Activity, Aberdeen Proving Ground, MD.** Mr. Bechtold was conducting single-pilot flight in a UH-1H over a marsh inside a range impact area. At 40 knots and 300 feet above 15-foot-deep water and 1000 meters from dry land, the aircraft yawed hard followed by rapid loss of N2. N2 indicator then failed as RPM was passing below 5200. As Mr. Bechtold lowered collective, the rotor began to overspeed. He quickly reacted by adjusting collective and throttle to retard the overspeed while simultaneously making an emergency call to report his position and instructing the crew chief and four passengers to prepare for possible crash landing in the water. As the RPM came momentarily under control, he realized that it was going to underspeed. Again he reacted by increasing throttle and reducing collective. At this point it became apparent that the RPM was not going to stabilize as the engine was continuing

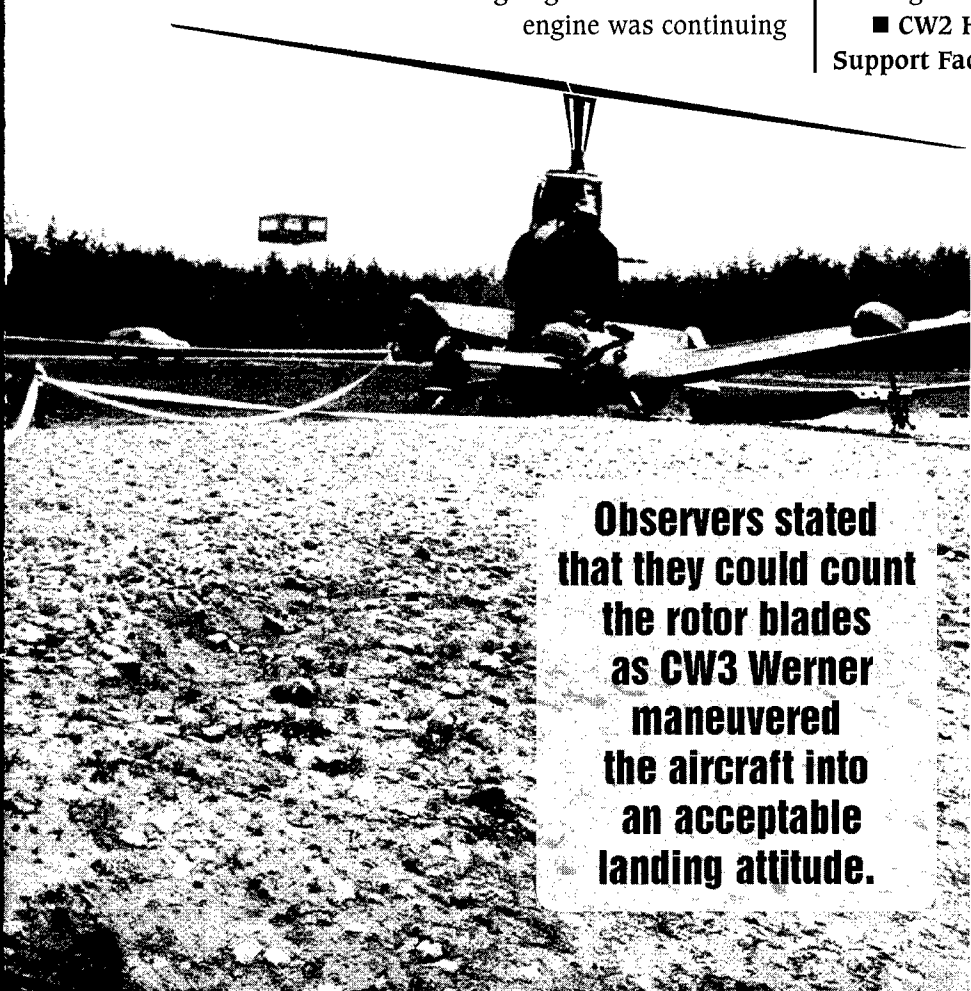
to rapidly accelerate and decelerate. So rapid and severe were the increases and decreases of engine (5000 to 7000) and rotor RPM that maintaining heading control became almost impossible. With each increase, the aircraft climbed, and with the accompanying decrease, it descended.

Fighting to maintain control of engine and rotor RPM as the aircraft began to settle toward the water, Mr. Bechtold turned the aircraft toward land 1000 meters away. As he neared the shore, he realized that 35-foot trees remained between him and the landing zone. He increased collective and adjusted throttle to gain just enough altitude to clear the trees. Upon reaching the landing area, he rolled off throttle and executed an autorotation, cushioning the landing with collective and slight forward airspeed. No one was injured, and the aircraft was not damaged. The N2 spur gear had failed, causing loss of drive to the N2 accessory drive gearbox.

■ **CW2 Robert J. Augugliaro, Aviation Brigade, 25th Infantry Division (Light), Wheeler AAF, HI.** During hover taxi for takeoff from a parking ramp heavily congested with operating aircraft and a large concentration of troops awaiting deployment, CW2 Augugliaro's AH-1F began an uncommanded rapid spin to the left. He applied full right pedal to arrest the spin, but doing so had no effect because the tail-rotor control linkage had separated. After three rapid 360-degree turns to the left, CW2 Augugliaro managed to level the Cobra and execute a hovering autorotation. The aircraft touched down level, with a slow left spin and a slight left drift. No one was injured, and nothing was damaged.

■ **CW2 Howard B. Brandt, Sacramento Army Aviation Support Facility, California Army National Guard,**

**Mather, CA.** The UH-1V was on final approach after completion of maintenance test flight. CW2 Brandt was flying from the right seat with a nonrated crewmember in the left seat. At about 10 feet AGL, he heard a loud noise, and the master caution and hydraulic segment lights came on, followed by complete hydraulics failure. CW2 Brandt immediately began to lower collective and close throttle as the aircraft started a rapid yaw to the right. He was able to close the throttle after about 90 degrees of rotation, and he completed a successful autorotation. The aircraft landed with some rotation but remained upright. The tail rotor stopped rotating just seconds after touchdown. Maintenance inspection revealed failure of a helical gear that drives the tail-rotor output quill and the hydraulic-pump gear. A hard-landing and sudden-stoppage inspection found no other damage to the aircraft. □



**Observers stated that they could count the rotor blades as CW3 Werner maneuvered the aircraft into an acceptable landing attitude.**

## ASE/EW course available

The proper use of aircraft survivability equipment (ASE) can greatly increase the survivability of aircraft on the modern-day battlefield. A 2-week course designed to train officers in all aspects of ASE employment procedures is being taught at Fort Rucker. The ASE/Electronic Warfare Officer's Course (ASE/EWOC) is open to Army aviators who—

- Possess a SECRET security clearance.
- Have completed one utilization tour.
- Are ASET II proficient.
- Are identified to be placed in a unit EWO position.

Warrant officers who complete the course will be qualified for an additional skill identifier of H3. The course is also a prerequisite for the tactical operations officer track for warrant officers.

Twelve courses are scheduled for fiscal year 1997.

Class	Course dates
97-01	28 Oct-8 Nov 96
97-02	2-13 Dec 96
97-03	6-17 Jan 97
97-04	3-14 Feb 97
97-05	3-14 Mar 97
97-06	7-18 Apr 97
97-07	5-16 May 97
97-08	3-13 Jun 97
97-09	7-18 Jul 97
97-10	28 Jul-8 Aug 97
97-11	8-19 Sep 97
97-12	29 Sep-10 Oct 97

Officers wishing to attend the course should submit DA Form 4187 through their commander.

POCs: CW3(P) Joseph Smith or Mr. Robert Wynkoop, ASE/EWOC, Fort Rucker, DSN 558-2379 (334-255-2379)

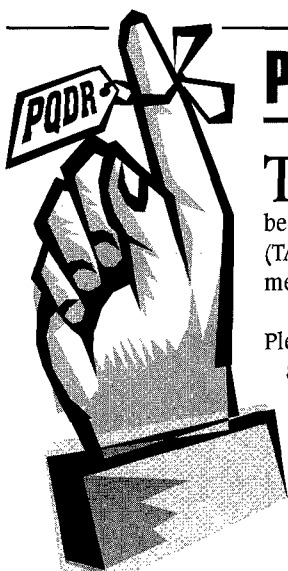
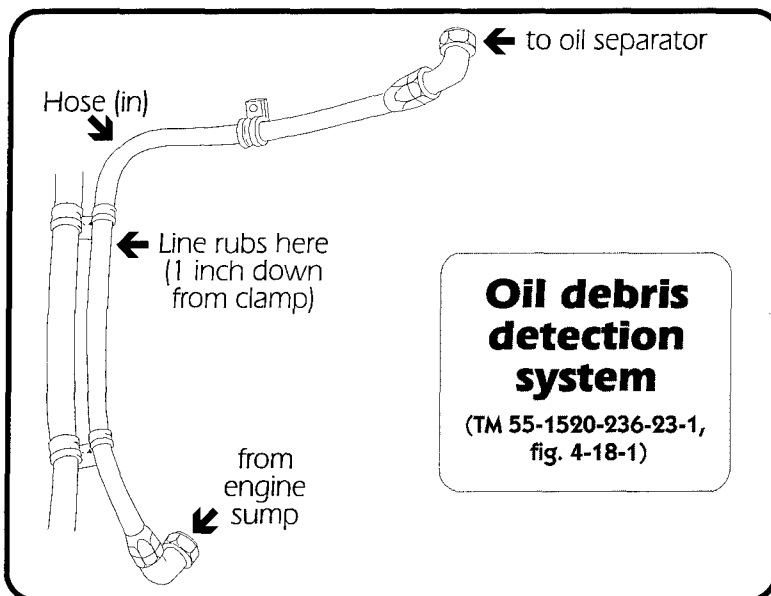
## Attention AH-1E/F maintainers

Recently, an oil line from the accessory gearbox to the engine oil debris detection system (ODDS) on an AH-1F ruptured in flight. Luckily, the aircraft, which was on an IFR training mission, was on short final when the line ruptured. Otherwise, this Class E mishap could have been much more serious.

Subsequent maintenance inspection found that the oil line had ruptured due to contact with the sharp edges of the flange on the improved particle separator (IPS) modification. The unit has found three other aircraft with the same problem and has had to replace the oil lines.

It'd be a good idea to inspect *all* AH-1s with the ODDS installed (MWO 55-1520-236-50-30) to ensure that the oil line is not rubbing against the IPS flange.

POC: CW5 Bill Ramsey, USASC Aviation Branch, DSN 558-2785 (334-255-2785)



## PQDR reminder

The Safety Center still needs a copy of all aviation Category I Product Quality Deficiency Reports (PQDRs). However, over the past couple of years, the number we've gotten has gone down drastically. The problem may be that DA Pam 738-751: Functional Users Manual for the Army Maintenance Management System—Aviation (TAMMS-A) lists only our address for the old DD Form 173/3: Joint Message Form—and hardly anyone uses that message system anymore.

The newly revised DA Pam 738-751 contains updated addresses and phone numbers for the Safety Center. Please use them to furnish us an information copy of all aviation Category I PQDRs. For your convenience, we're also publishing them here:

- E-mail: cssc@rucker-safety.army.mil
- Fax: ATTN: CSSC-SIR, DSN 558-9528/2266/9478 (334-255-XXXX)
- Mail: Commander, U.S. Army Safety Center, ATTN: CSSC-SIR, Bldg. 4905, 5th Ave., Fort Rucker, AL 36362-5363.

POC: SFC John Morthole, USASC Aviation Branch, DSN 558-3650 (334-255-3650)



# Accident briefs

Information based on preliminary reports of aircraft accidents

## Aviation flight accidents

### Utility

#### UH-1 Class B

H series - At about 10 feet AGL during shallow approach to open field, aircraft abruptly yawed right 20 degrees. It continued to spin and descend until it hit cross-slope in a gully nose-low and rocked rearward, contacting ground with tail. Tail rotor dug into ground, separating one blade. Aircraft became airborne again, lost tail rotor authority, and spun approximately 90 degrees to the right, hitting ground a second time. Aircraft sustained major structural damage. Two of the eight occupants were injured; one had a broken nose and the other a back injury.

#### UH-1 Class E

H series - Low RPM audio and light activated during flight. RPM sending unit was adjusted.

H series - Master caution and inverter caution panel light came on in flight. Spare inverter turned on and aircraft returned to base. Inverter circuit breaker popped. Main inverter replaced.

#### UH-60 Class B

A series - During low-level turn, tail rotor hit treetop. Postflight inspection revealed damage to all main rotor blade tip caps, surface damage to some main rotor blades, and damage to tail rotor paddles and one side of stabilator.

#### UH-60 Class E

A series - At 500 feet AGL and 60 knots, master caution light came on. Maintenance replaced 90-degree gearbox assembly.

A series - During No. 2 engine start, PC noticed power control lever idle stop was rotating out of position, interfering with PCL movement. Aircraft was shut down, and stop block was reset.

A series - No. 2 torque began fluctuating erratically in cruise flight. Rotor RPM remained at 100 percent, and TGT remained within normal limits. Aircraft was returned to airfield and shut down without incident. Maintenance replaced electrical control unit.

### Attack

#### AH-1 Class C

F series - At about 300 feet AGL and 60

KIAS after takeoff during traffic-pattern training, one main rotor blade hit one or more seagulls in a flock that was crossing the traffic pattern.

#### AH-1 Class D

F series - IP sitting in rear seat initiated hovering autorotation to sod taxiway from 3-foot moving hover. Crew reported that aircraft landed rocking forward and aft. Neither crewmember felt landing was excessively hard and flew aircraft back to home station. After setting down, crew felt that aircraft was sitting right-side low. Postflight inspection revealed crosstubes were spread and UHF and VHF antennas and surrounding sheet metal were damaged.

#### AH-1 Class E

E series - On shutdown, hydraulic fluid was seen beneath transmission and in hydraulic compartment. No. 2 hydraulic pump was replaced.

E series - High-frequency vibration was felt through airframe during hover, and aircraft landed. Oil cooler bearing had failed. Oil cooler was replaced, and aircraft was released for flight.

F series - During runup, engine oil bypass caution light came on. Inspection revealed that 1 quart of oil had leaked from engine.

F series - During climb, all SCAS channels disengaged. With SCAS power remaining on, dc SCAS power circuit had popped. Circuit breaker was reset, but attempts to engage SCAS channels popped it again. Cause not reported.

F series - Pilot's torque gauge failed at 5-foot hover. Aircraft landed without further incident. Torque gauge was replaced.

F series - Alternator/rectifier caution lights came on and SCAS kicked off line during IGE hover. Aircraft landed, and crew tried unsuccessfully to reset alternator. Aircraft was shut down. Maintenance could not duplicate problem on subsequent runup.

F series - DC generator failed to come on line during runup. Aircraft was shut down. Maintenance replaced starter generator.

#### AH-64 Class A

A series - During multiship NVS NOE training, main rotor blades of Chalk 3 contacted a tree that was upslope and to the right of the aircraft. Crewmembers'

attention was focused on Chalk 2, which was in a stationary hover to the left and downslope from Chalk 3. Aircraft sustained major damage to main rotor, tail rotor, tail boom, and cockpit area. Crew suffered superficial injuries.

#### AH-64 Class B

A series - Aircraft returned to airfield for maintenance for intermittent functioning of heading attitude reference system. After system was reset and appeared to function, aircraft hovered to departure point and crew held for landing aircraft, at which time system once again malfunctioned. Aircraft drifted left and tail rotor contacted main rotor of parked AH-64.

#### AH-64 Class D

A series - Bird struck windshield over copilot's head during contour flight. Windshield sustained significant crack top to bottom and side to side. Aircraft landed without incident.

#### AH-64 Class E

A series - Transmission chip detector light came on during hover. Cause unknown.

A series - During cruise flight, all engine (Marconi) indicating instruments dimmed and could not be read. Attempts to adjust brightness control knob had no effect, so aircraft returned to base. Problem could not be duplicated by maintenance.

A series - Nose gearbox chip caution came on during approach to firing point. Approach was aborted and aircraft returned to base. Cause not reported.

A series - During HIT check, smoke and fumes were emitted from left console near power levers. Crew relocated aircraft back on pad. Smoke and fumes increased during shutdown. Cause not reported.

A series - During rollout of run-on landing, crew smelled odor of burning rubber. Crew returned to airfield, where it was discovered that tire had blown. Brake was not set on landing; however, wheel brakes were applied to slow aircraft after touchdown. Tire was replaced.

A series - No. 2 engine failed during ECLL lockout when SP in front seat retarded power lever from lockout position. After test flight, aircraft released for flight.

A series - Pilot detected change in aircraft attitude during cruise flight and determined that stabilator automatic mode had failed. Control authority in manual

mode was limited to -13° to -35° trailing edge down. Pilot performed precautionary landing without incident. Maintenance determined that stabilator electromagnet relay had failed. It was replaced.

A series - During straight and level flight at 800 feet AGL and 100 knots, oil PSI accessory pump caution warning light came on. Postflight inspection revealed no damage or leaking fluids.

A series - During formation flight, crew of Chalk 3 noticed that Chalk 4's left engine cowling was open. Both aircraft exited the formation and landed in nearby field. Engine cowling was replaced to return aircraft to flight status; cowling is being repaired.

A series - After preflight, crew chief opened hydraulic access door (panel T325) to wipe up excess hydraulic fluid then failed to close it. When pilot started APU, edge of open door was burned.

A series - During shutdown after NVS mission, crew chief reported unusual noise coming from main rotor. Inspection revealed 2-inch portion of No. 3 main rotor blade was debonding. Main rotor blade was replaced.

A series - Utility hydraulic low light came on during OGE hover. Inspection revealed leaking fitting on line in No. 1 pylon. Packing was replaced and fitting was retorqued.

A series - During cruise flight on NVS mission, aircraft encountered flock of birds. Crew felt single impact and saw bird glance off to right side of aircraft. Postflight inspection found impact site but no damage.

## Cargo

### CH-47 Class C

D series - During NVG multi-ship false-insertion operation, aircraft landed hard with right rear landing gear. Top mounting bolt separated, and top portion of strut was propelled into right engine. Debris damaged all main rotor blades.

E series - During fast-rope operations at stabilized 36-foot hover, roper exited on left side of cargo ramp. His machinegun hung up on the ramp, causing the weapon's sling to ride up to the soldier's neck. The sling choked him and prevented him from proceeding down the rope. As the roper was trying to climb up the rope to free himself, the flight engineer/fast-rope safety reached down and released the weapon from the ramp just as the roper reached up to free himself. His weapon now free of the ramp, the roper could not hold on to the rope with one hand. He lost his grip and fell to the ground. Fast-rope operations ceased, and the aircraft landed. The roper was

hospitalized with a punctured lung and two broken ribs.

### CH-47 Class E

D series - On final with 18,000-pound external load, crew smelled burning hydraulic fluid and landed. Caused by leaking fitting on No. 1 power transfer unit. Lines were tightened and aircraft returned to service.

D series - No. 1 flight hydraulic pressure gauge was reading 0 PSI with no associated caution light. Fluid levels and temps indicated normal. No. 1 flight hydraulic pressure transducer was replaced.

D series - Loss of right-side bubble window during maintenance test flight was discovered on postflight inspection.

D series - During cruise flight, centering device would not release. Maintenance replaced magnetic brake assembly.

D series - After setting down external load, crew noticed unusual noise and vibration from forward transmission area. No. 1 flight boost pump was replaced.

D series - During NVG multi-aircraft external load training, debris blew into aft rotor system, damaging last 36 inches of trailing edge of aft rotor blades.

D series - At 10-foot hover with load, PTIT went to 800°C and No. 1 engine torque spiked to 150 percent. Torque needle then started spinning backwards. Maintenance could not duplicate. Suspect faulty indicator.

D series - During takeoff, IP noticed forward longitudinal cyclic trim indicator had not fully retracted to ground position. Airspeed was adjusted, and aircraft landed to runway. Test flight could not duplicate. MOC'd and released for flight.

D series - While climbing from terrain flight to cruise altitude, No. 1 engine N1 torque and rotor indicated an increase. Rotor increased to 103 percent. Crew performed emergency procedure for high-side failure and prevented an overspeed. Aircraft landed without further incident. N2 actuator on No. 1 engine was replaced.

D series - Flight engineer reported vibrations and unusual noise in aft area as he began ramp check during cruise flight. Moments later, noise vibrations increased, becoming audible in cockpit. Landing procedure was initiated, and moments before landing, the utility hydraulic pump panel light illuminated and utility pressure began falling to zero. Utility pump was replaced and aircraft released for flight.

D series - During two-wheel back taxi from parking, rotor wash blew tunnel covers off two parked aircraft. Tunnel covers had been closed but not secured. No damage to operating aircraft.

D series - During final approach, No. 1

engine beep trim failed. Aircraft landed. N2 actuator was replaced.

## Observation

### OH-6 Class C

J series - Hot start. Turbine outlet temperature reached 1013°F on engine start-up for training flight.

### OH-58 Class C

A series - Checklist was left on horizontal stabilizer during engine runup for flight. As aircraft was raised to hover, checklist blew into tail rotor, damaging both blades. Aircraft was landed without further incident.

C series - Engine failed on takeoff as maintenance test pilots were recovering a downed OH-58C. Aircraft landed hard. Tail boom separated, and main rotor was damaged.

### OH-58 Class E

A series - PC applied excessive power during NOE deceleration. N2 droop occurred and low RPM light and audio activated, followed by N2 recovering to 100 percent. Maximum torque observed was 100 percent. Aircraft landed without further incident. Precautionary overtorque inspection was conducted, and no damage was found. Aircraft was released for flight.

A series - Master caution and dc generator segment lights came on in cruise flight. Attempts to reset the generator were unsuccessful, so precautionary landing was made. Maintenance inspection revealed the generator shaft had sheared at the point where the splines begin.

A series - Master caution and dc generator caution light came on in cruise flight. Emergency procedures were immediately executed, but generator would not come back on line. Aircraft was flown to nearest airfield and landed without further incident. Cause not reported.

C series - After bird strike, aircraft developed severe 1:1 vertical vibration. Red PC link was bent.

D series - During engine start, TGT exceeded start limit of 927°C. PI executed hot-start emergency procedures without further incident. Maintenance review of engine history page indicated TGT of 1019°C for "blank" seconds, and engine monitor page indicated TGT of 1010°C for "zero" seconds. Turbine section replacement is required whenever TGT exceeds 999°C. Maintenance removed engine and AVIM replaced turbine section.

D series - Flight master controller processor unit (MCPU) fail message displayed during cruise flight on NVG mission. MCPU was replaced and aircraft was released for flight.

## Training

### TH-67 Class E

A series - Battery power would not start aircraft. N1 only 10 percent on attempt.

A series - After 1.25-hour flight, fuel gauge showed 72 gallons, and aircraft was refueled with 30 gallons. As soon as cap was removed and fueling began, gauge dropped to normal. After 45-minute flight, gauge stuck at 70 gallons.

## Fixed wing

### C-12 Class D

C series - Multiple bird strikes occurred during takeoff roll. Takeoff was aborted and aircraft taxied to maintenance hangar, where it was washed, inspected, and cleared for flight to home station. Radome and leading edges of wings were damaged.

### C-12 Class E

C series - During climbout, No. 1 engine torque dropped to 50 percent, then fluctuated followed by illumination of No. 1 engine chip light. Engine was secured and aircraft landed. Removal of chip detector revealed excessive metal on detector and in engine oil. Engine was replaced.

C series - Aircraft was in straight and level flight at 25,000 feet. Attitude indicator made uncommanded pitch down 15 degrees, but aircraft attitude did not change. Attitude indicator then made uncommanded 10-degree pitch up, and aircraft returned to base using standby attitude indicator. Vertical gyro was replaced.

C series - Right engine was shut down in flight due to erratic engine operation and large fluctuations in torque, TGT, and N1. During cruise, 5.25 hours into training mission, crew noticed 15-percent drop in torque associated with coughing sound coming from right engine. This occurred several times in span of 1 minute. Pilot and passenger on right side saw flames shooting from exhaust stacks every time engine "coughed." PC called for and executed engine-shutdown-in-flight checklist, and aircraft flew single engine to nearest airfield. Cause of failure not known.

F series - During cruise flight, forward inboard corner of upper engine cowl came unlocked. Maintenance replaced fastener on cam lock latch assembly.

F series - During en route phase of low-level training mission, IP retarded No. 2 engine power lever to idle, simulating engine failure. Aircraft yawed, and PI proceeded with -10 emergency procedures. Torque was 104 percent with fuel-flow indication of 490. IP and PI immediately checked other engine instruments, which were all normal. IP and PI then assumed

torque indicator malfunction as No. 2 engine torque needle was oscillating around 104 percent. IP then discovered that engine power lever had failed, and engine control was lost. Engine indications remained stable until final approach to airfield. On short final, IP feathered No. 2 prop lever to maintain directional control. Approach and landing to touchdown were accomplished, and engine was secured at touchdown using No. 2 engine condition lever. Aircraft was taxied off runway and shut down. Engine was replaced.

### OV-1 Class E

D series - During engine runup while preparing to taxi, VHF radio was determined to be inoperative and UHF intermittent and unreliable for single-radio communications. Aircraft was shut down and VHF transmitter-receiver was replaced. While at runup area following second start, INS failed. Aircraft was shut down, and INS was replaced. While preparing for taxi following the third start and successful INS runup, left fuel transfer pump caution light came on. Aircraft was shut down, and defective transfer pump was replaced.

D series - During engine runup, No. 2 engine fuel flow indication was excessively high (1000 lbs/hr) at ground idle. Aircraft was shut down. Broken ground wire to fuel flow pressure transmitter was replaced.

D series - Having started No. 1 engine with GPU, PC attempted twice without success to start No. 2 engine. Maintenance investigation revealed battery charge was too low to allow instrument power supply relay to open or undercurrent relay to close. Battery was replaced.

### O-5 Class E

B series - During runup, crew noted torque, T5, and fuel flow on No. 3 engine oscillating. Aircraft was shut down without incident. Maintenance changed fuel control unit, conducted MOC, and released aircraft for flight.

## Safety messages

### Aviation safety action messages

■ Aviation safety action maintenance mandatory message concerning stabilator actuator clevises on all EH/UH/MH-60 aircraft (UH-60-96-ASAM-09, 281327Z Aug 96). Summary: Recent contracts to procure stabilator clevises, P/Ns 70400-06638-043 and -044, identified a discrepancy involving omission of epoxy primer to the .375-inch diameter bore on the threaded shank. The purpose of this message is to require removal and visual inspection of all

previously installed and new requisitions of the above referenced clevises. This inspection is to ensure that the bore is coated with epoxy primer to protect from corrosion. The message outlines procedures for removing corrosion and applying epoxy primer. Contact: Mr. Lyell Myers, DSN 693-2438 (314-263-2438).

■ Aviation safety action maintenance mandatory message concerning spindle assemblies and spindle elastomeric bearings on all H-60 series aircraft (UH-60-96-ASAM-10, 111656Z Sep 96). Summary: During a recent 500-hour phase maintenance inspection, a spindle shank was found to be circumferentially cracked in the area of the thread root and spline. Preliminary indications are that excessive wear on the elastomeric teflon sleeve bearing caused an increased gap between it and the spindle sleeve bearing, resulting in greatly increased loads carried in the spindle thread area. The purpose of this message is to (1) establish requirement to replace teflon sleeve bearing in the spherical elastomeric bearing assembly at every 500-hour PMS-2 inspection, and (2) for aircraft currently undergoing PMS-2 inspection or depot maintenance, to complete inspection outlined in message and, as a one-time requirement, collect statistical data. Contact: Mr. Lyell Myers, DSN 693-2438 (314-263-2438).

■ Aviation safety action maintenance mandatory message concerning increase in fatigue life of the Fenn-manufactured main rotor blade cuff (P/Ns 70150-09109-041 and -043) (UH-60-96-ASAM-11, 201410Z Sep 96). Summary: Engineering testing has resulted in an increase in the interim retirement life of Fenn-manufactured (cage 82001) main rotor blade cuffs from 75 to 450 hours. The purpose of this message is to give instructions for annotating component records to reflect this increase. Contact: Ms. Tammy Nelson, DSN 693-1601/2085 (314-263-1601/2085).

■ Aviation safety action maintenance mandatory message concerning inspection of all H-60 main rotor hub assemblies (UH-60-97-ASAM-01, 071958Z Oct 96). Summary: During manufacture of some main rotor hub assemblies, the proper edge break was not applied to the inside edge of one of the damper bracket attachment holes. Stress risers can result from this condition, which increases the opportunity for cracks to develop. The purpose of this message is to require inspection of all main rotor hub assemblies for proper edge break, NDI inspection and edge break of all assemblies found deficient, and NDI inspection of all main rotor hubs for cracks during the 500-hour phase inspection.

Contact: Mr. Jim Wilkins, DSN 693-2258 (314-263-2258).

■ Aviation safety action informational message concerning the area weapon system (AWS) on all AH-64A series aircraft (AH-64-97-ASAM-01, 091420Z Oct 96). Summary: It has recently been discovered that, under certain conditions, the AWS can continue to fire or resume firing in an uncommanded direction. The purpose of this message is to alert the field to these conditions, which will continue to exist until the AWS control logic is modified. Contact: Mr. Jim Wilkins, DSN 693-2258 (314-263-2258).

■ Aviation safety action maintenance mandatory message concerning inspection and repair of aft pylon clamshell door lower latch on all CH-47D, MH-47D, and MH-47E

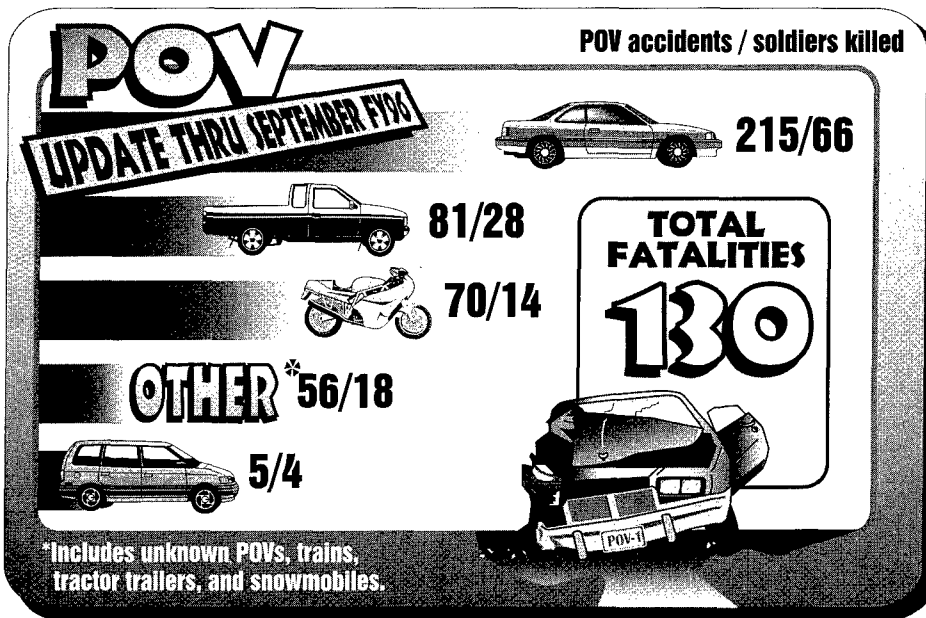
series aircraft (CH-47-96-ASAM-09, 121316Z Sep 96). Summary: Several aircraft recently have lost the aft pylon clamshell doors in flight due to failure from vibration of the lower latch pin or fitting that holds the doors together. These in-flight separations have caused damage to rotor systems, engine tail cones, and airframes. The purpose of this message is to require inspection of the aft pylon clamshell doors for proper fit and to affix a strap assembly with latch to the lower left-hand door assembly at the bottom edge of the opening. Contact: Mr. Jim Wilkins, DSN 693-2258 (314-263-2258).

### Maintenance information message

■ Aviation maintenance information

message concerning AN/AVS-7 heads-up display (HUD) signal data converter (SDC) survey (MIM-GEN-96-05, 130229Z Sep 96). Summary: Project Manager, Night Vision/Reconnaissance, Surveillance, and Target Acquisition is in the process of completing retrofit of CV-4229/AVS-7 SDC, NSN 5895-01-361-8986, part of the AN/AVS-7 HUD. The purpose of this message is to ensure that all systems have been retrofitted by requesting that all UH-60A/L, MH-60K, CH-47D, and MH-47E units survey and check the software number ID tag on the top of the SDC to verify that they have the latest data. Contact: Mr. Dick Mooy, DSN 693-9315 (314-263-9315).

For more information on selected accident briefs, call DSN 558-2785 (334-255-2785).




*Flying is the  
2nd greatest thrill  
known to mankind.  
Landing  
is the 1st.*

#### In this issue:

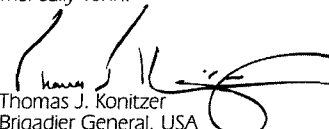
- Recipe for disaster
- Food for thought
- About the weather . . .
- ASO corner—ASO conference update
- ASO corner—More on ASO list server
- Broken Wing awards
- PQDR reminder
- Attention AH-1E/F maintainers
- ASE/EW course update

### Class A Accidents through September

		Class A Flight Accidents		Army Military Fatalities	
		95	96	95	96
1ST QTR	October	0	1	0	0
	November	0	0	0	0
	December	1	0	0	0
2ND QTR	January	1	1	1	0
	February	0	0	0	0
	March	1	2	0	7
3RD QTR	April	1	1	5	3
	May	2	0	2	0
	June	1	1	0	6
4TH QTR	July	0	0	0	0
	August	2	0	5	0
	September	1	1	0	0
<b>TOTAL</b>		<b>10</b>	<b>7</b>	<b>13</b>	<b>16</b>



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Thomas J. Konitzer  
Brigadier General, USA  
Commanding General  
U.S. Army Safety Center